Fujitsu Semiconductor Design (Chengdu) Co., Ltd.

MCU-AN-500108-E-18

New 8FX FAMILY

8-BIT MICROCONTROLLER

ALL SERIES

STAND-ALONE PROGRAMMER

Revision History

Version	Date	Updated by	Modifications
1.0.0	5/18/2011	Frank Li	First version
1.1.0	5/20/2011	Frank Li	Modify some items
1.2.0	8/9/2011	Frank Li	Update some items such as SW add a FW upgrade function
1.3.0	9/5/2011	Frank Li	Update some picture and add the description of FW version
1.4.0	11/3/2011	Jane Li	Add standalone BGMA operation description
1.5.0	11/11/2011	Frank Li	Add baud rate 125Kbps in drop list menu
1.6.0	12/7/2011	Jane Li Frank Li	Add notes on pictures
1.7.0	12/8/2011	Frank Li	Add one chapter to introduce USB driver install
1.8.0	12/30/2011	Frank Li	update pictures

This manual contains 20 pages.

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1 Introduction

This user manual describes how to use stand-alone programmer and how to use BGMA standalone function.

2 Programmer System Function

This chapter introduces programmer system feature and basic function.

2.1 Overview

2.1.1 Download Mode GUI of Stand-alone Programmer

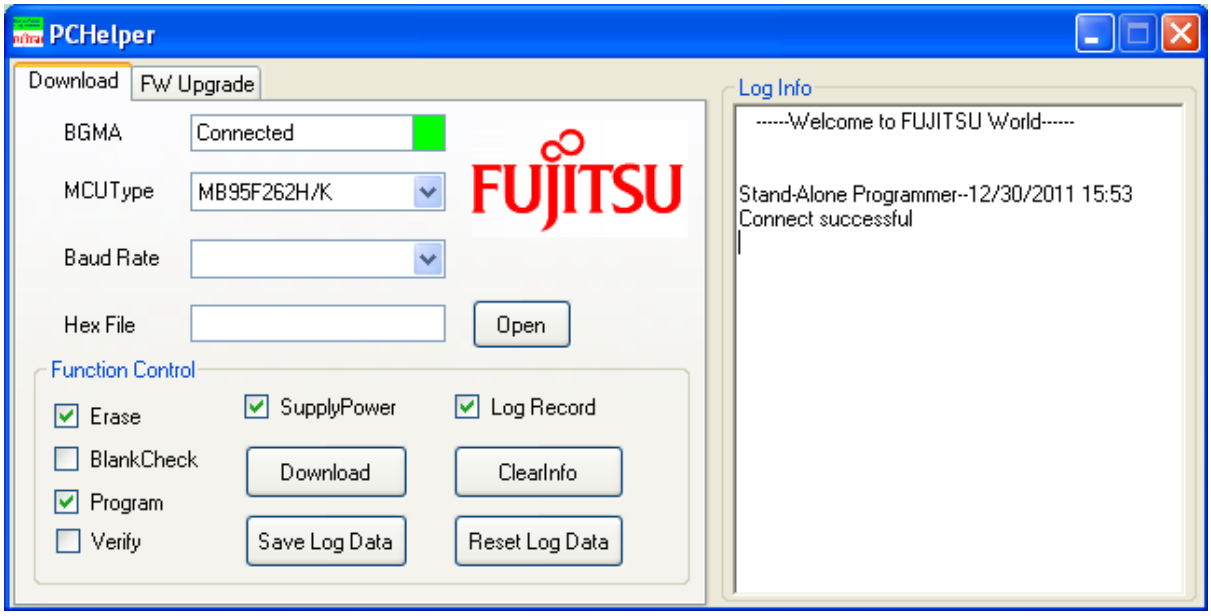

Figure 2-1: Main Interface Download Mode of Programmer

2.1.2 FW Upgrade Mode GUI of Stand-alone Programmer

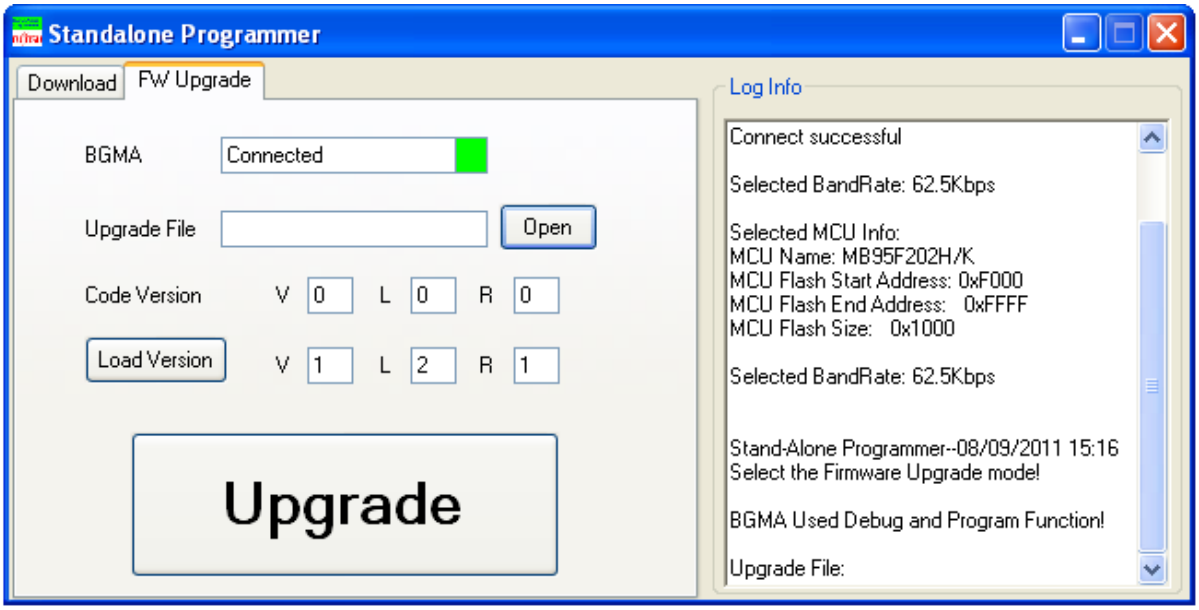

Figure 2-2: Main Interface FW Upgrade Mode of Programmer

2.1.3 Necessary Files List

Figure 2-3: Necessary File List

2.1.4 Introduction by file list

1) CHIPDEF_USB.INI: define the MCU name, flash start address, flash end address, flash size of New 8FX series chips;
2) PC Helper.exe: executable file of stand-alone programmer;
3) DATAFILE.txt: record last time selected MCU ID, baud rate and HEX file path;
4) SiUSBB2.dll: support MB2146-07-E driver, dynamic link lib with windows;
5) Drivers folder: drivers package of MB2146-07-E;

2.2 System Feature

- Automatically connect to BGMA
- Support all series of New 8FX chips except MB95200H,210H,220H
- Support Motorola and Intel format HEX code
- Choice of program step(Erase/Blank Check/Program/Verify)
- Load BGMA log data and calculate the time of successes or error and reset the log data
- Display information of programming log
- Support FW of BGMA upgrade

3 Set Programmer Parameter

This chapter sets the parameter in GUI interface.

3.1 Configure

3.1.1 Connect to BGMA

First power on the BGMA, then open this interface, if connect successful, it shows as below Figure 3-1. And it support hot device. If BGMA disconnect with PC accidentally, such as power off, this form can notice connection is off.

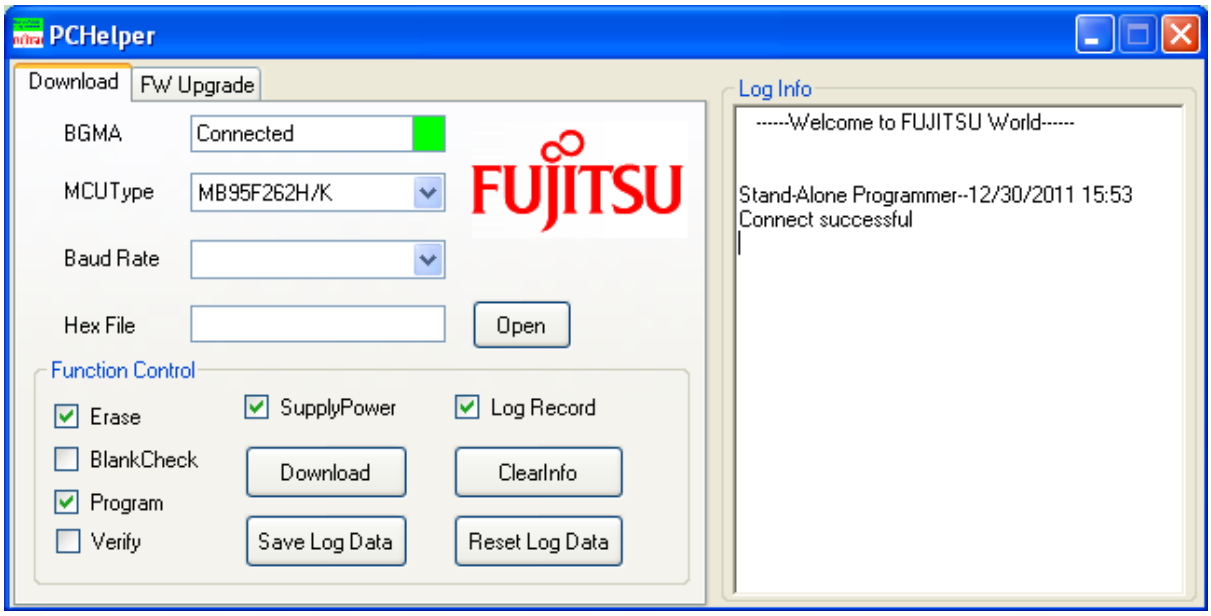

Figure 3-1: Connect Successful

3.1.2 Select MCU Type

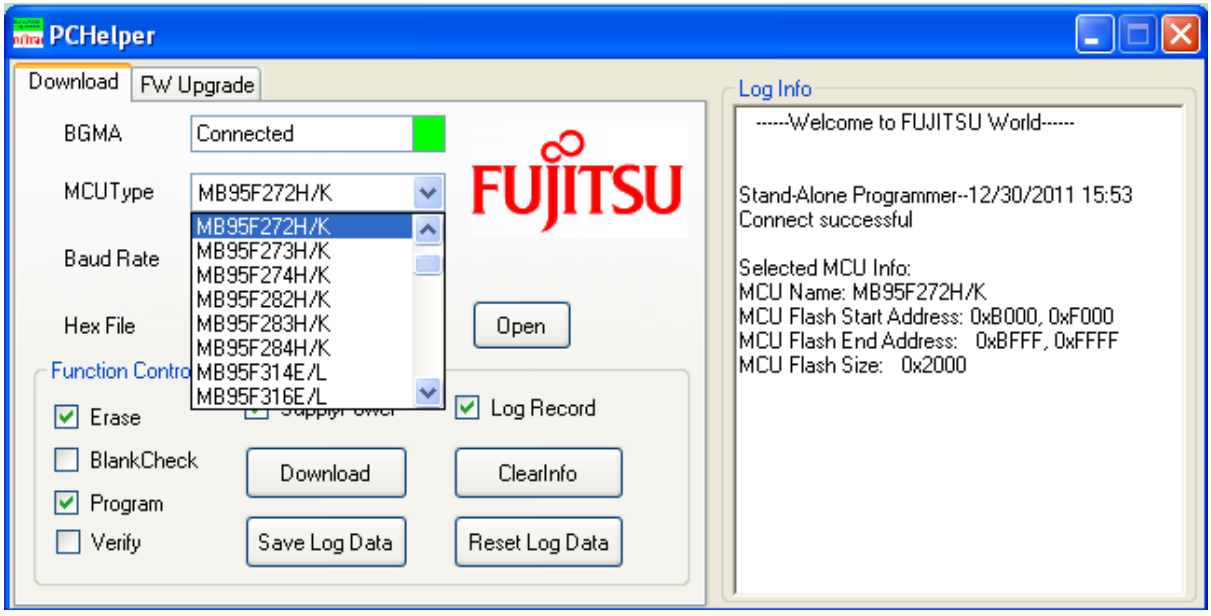

Figure 3-2: Select MCU Type

If there are new type updates, it just needs to add the chip information according to CHIPDEF_USB.INI. The format as below:

```
[MB95F584H/K]
StartAddress=0xB000
EndAddress=0xFFFF
FlashSize=0x5000
```

Figure 3-3: Chip Definition Information

3.1.3 Select Baud Rate

There are three cases to select baud rate:

a. MB95260H,MB95310L,MB95370L, MB95330H, MB95390H, MB95350L, MB95410H, MB95470, they just support 62.5Kbps and 125Kbps baud rate

b. MB95560H series, it just supports 62.5Kbps and 500Kbps.

c. MB95630H and the following develop MCU, it support 62.5Kbps, 500Kbps and 1Mbps.

3.1.4 Select Hex code file

This programmer supports Motorola and Intel format HEX code, as below: and it can automatically save MCU ID, baud rate and HEX file path after close the window, when next time for open this GUI, it can automatically load these information .

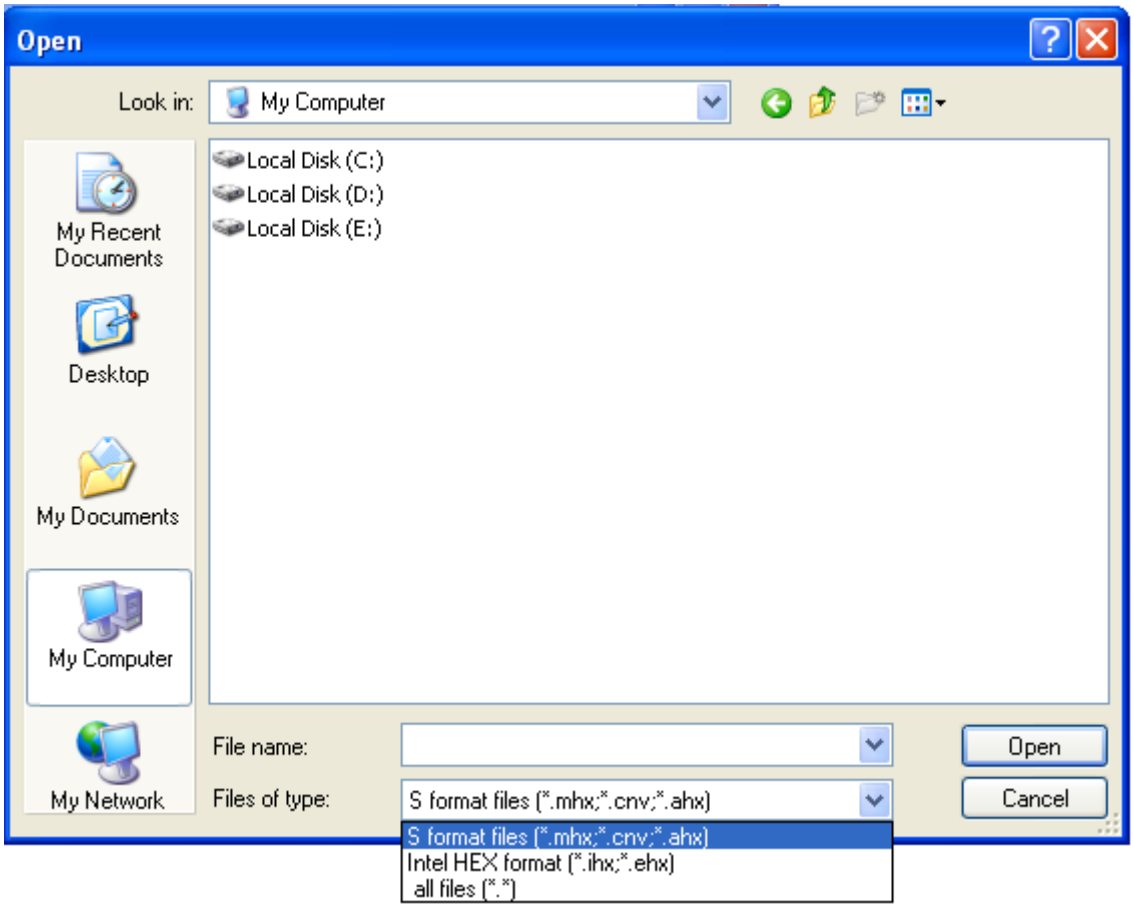

Figure 3-4: Select Hex File

3.1.5 Set Program Step

There are four options to choice, such as **Erase/Blank Check/Program/Verify**. The default selected **Erase** and **Program**.

3.1.6 Set Supply Power and Log Record

These two options are used to set BGMA supply power or not and Record the log data or not. The default selected both of all.

3.2 Download

When click **Download**, it shows below dialog Erase and Downloading, then the programmer can download hex code and configure information to BGMA flash memory.

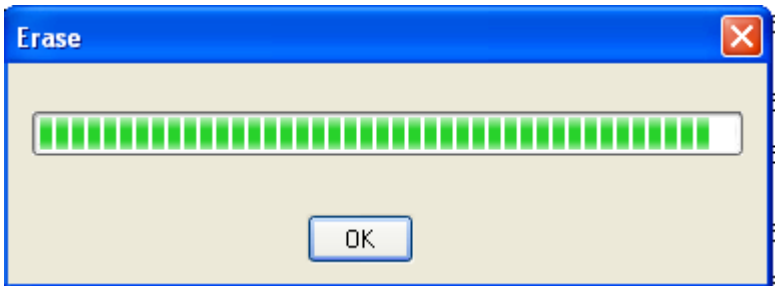

Figure 3-5: Erase Dialog

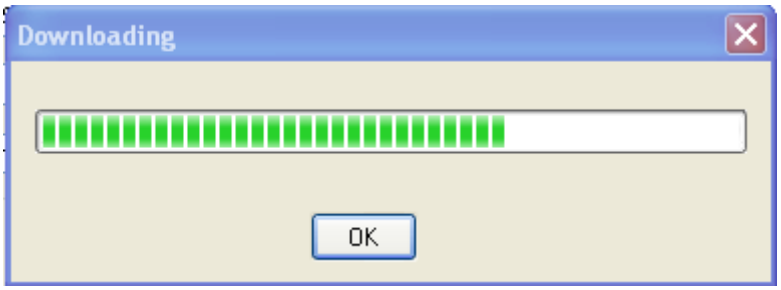

Figure 3-6: Downloading Dialog

3.3 Save Log Data

When click **Save Log Data**, it shows save file dialog, and selects a file to save the BGMA log data, as below figure. When save file finished, the programmer can calculate program total/ program successful count/ error count and so on, and it also display the result in Log info window.

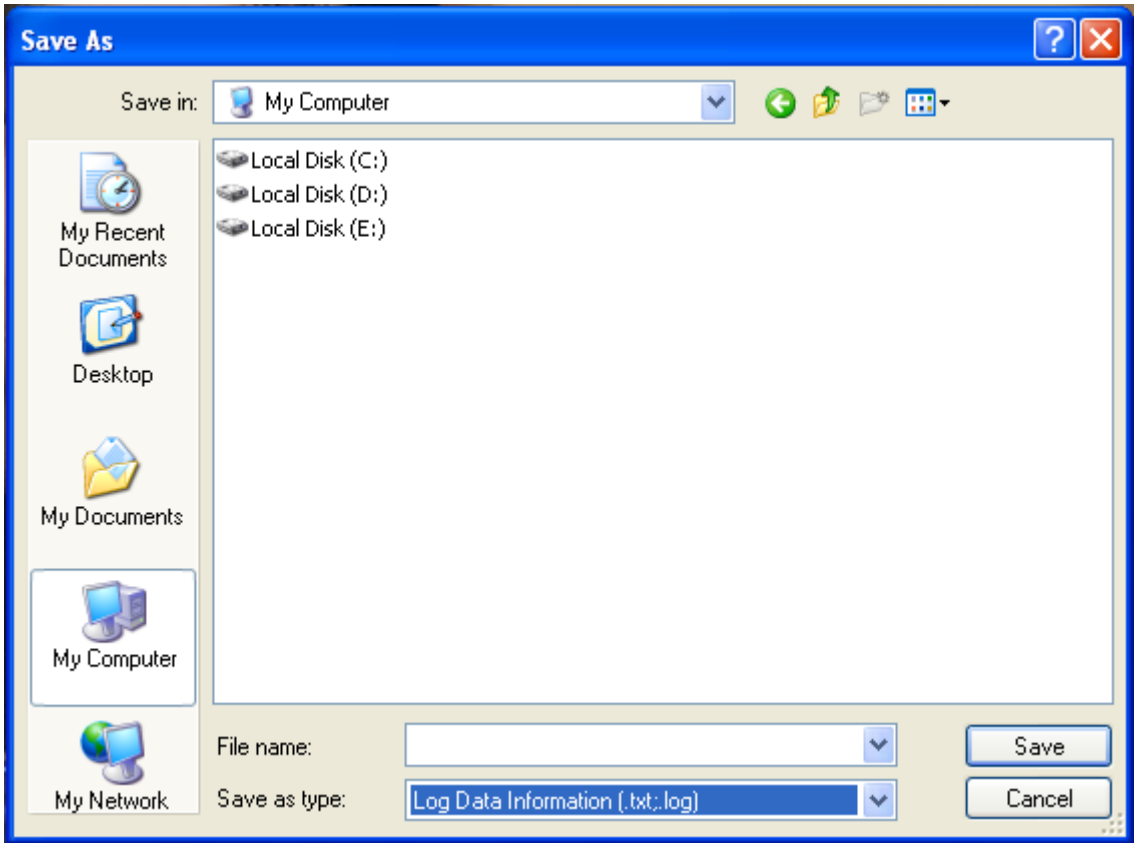

Figure 3-7: Save Log Data Dialog

3.4 Reset Log Data

When click **Reset Log Data**, it will clear the log data area, and the program total also will be cleared.

3.5 Clear Info

When click **Clear Info,** the log info window will be cleared.

3.6 View Version

When click the Fujitsu logo in **Download** mode, the info window will display the version information.

4 Upgrade BGMA FW

This chapter introduces how to upgrade the BGMA FW by selecting FW upgrade mode.

4.1 Configure

4.1.1 Connect to BGMA

It support hot device. If BGMA disconnect with PC accidentally, such as power off, this form can notice connection is off.

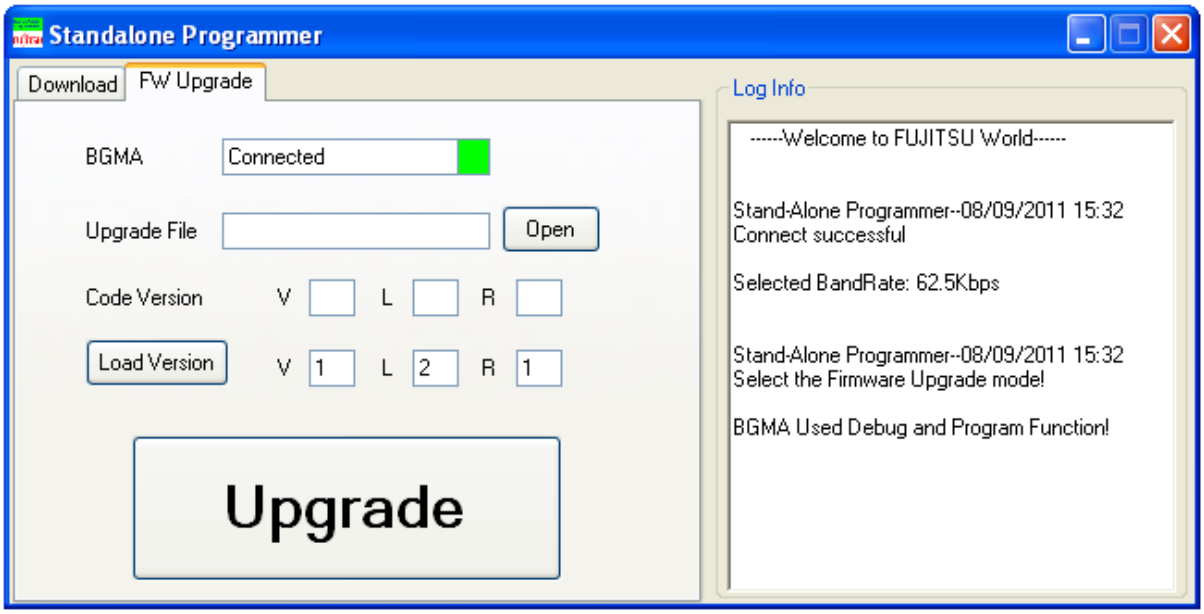

Figure 4-1: Main Interface FW Upgrade Mode of Programmer

4.1.2 Select upgrade file

The upgrade files contain stand-alone code and BGMA code. When select the upgrade file, **code version** indicates current version before upgrade. When click the **Load Version,** it shows currently version in BGM adaptor.

When click **Upgrade**, it shows progress dialog.

4.1.3 Version Information

Version of FW is saved in 0xF0004, it contains 3Bytes, first byte differentiates BGM function and Stand-alone function (V80: Stand-alone, V01: BGM); second and third byte mean the version.

5 Stand-alone Operation Step

When the New 8FX MCU hex file is downloaded to BGMA, user can use the BGMA stand-alone function to program the code to MCU singly.

In following section, the stand-alone operation step will be described.

5.1 Power on BGMA

1. Connect BGMA to power DC 5V-500mA(using USB cable connect to PC or power switcher)

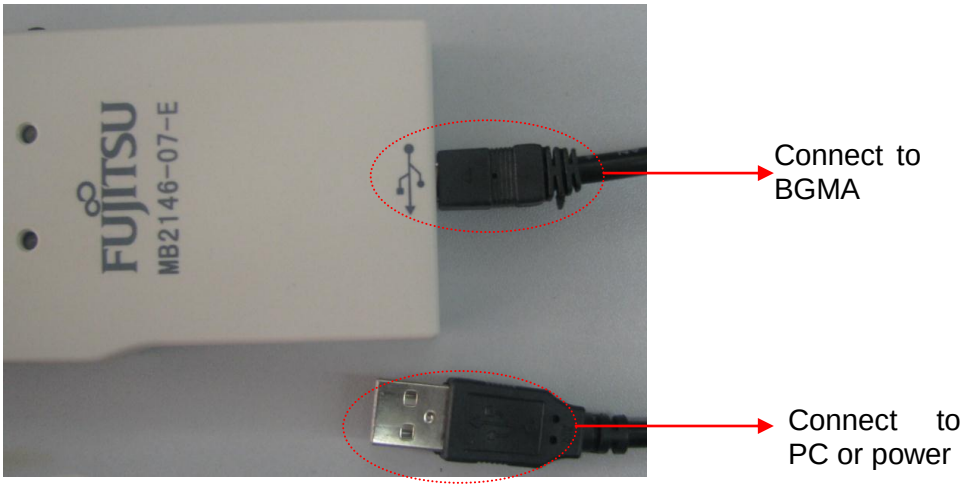

Figure 5-1: BGMA Power Input

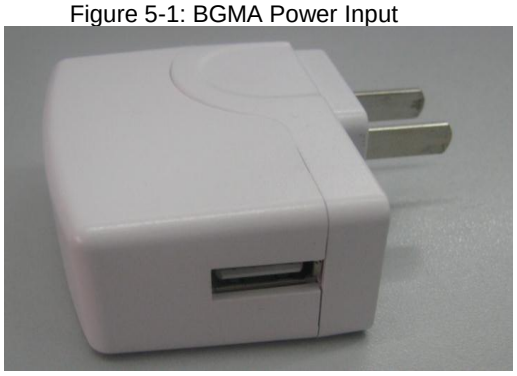

Figure 5-2: Power Switcher

2. Power on BGMA board by press power key on BGMA

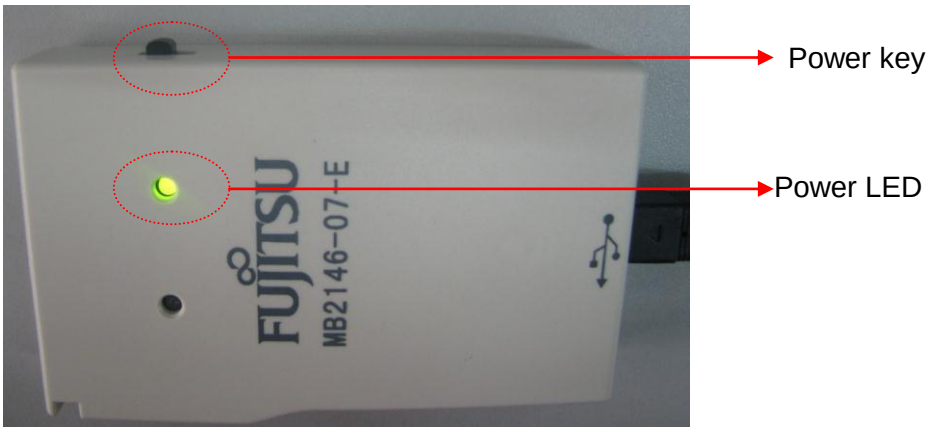

Figure 5-3: BGMA Power Key

5.2 Enter into Standalone Mode

1. Press mode key over 3s to enter into stand-alone mode

Figure 5-4: BGMA Mode Key

2. Status LED turn to green

Figure 5-5: BGMA Status LED

5.3 Power on Target Board

1. If the target board debug pin6 is connected to power pin1, like following picture

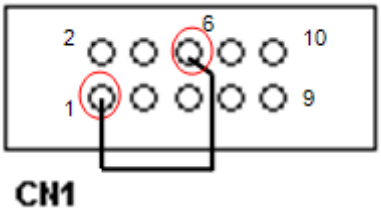

Figure 5-6: BGMA Supply Power to Target

2. It no need to power on target board
3. If not, power on MCU or target

Note: if the user current is greater than max current (200mA), the system will stop the power supply.

5.4 Execute

1. Press BGMA mode key quickly (within 1s)
2. The green of status LED will twinkle

5.5 Result Judge

1. If status LED turn to green again, successfully.
2. If the status LED turn to red, programming error. Please try programming again.

6 Usage Note

Before using the BGMA stand-alone function, user need to do following things:

1. Upgrade BGMA stand-alone FW, detailed operation please refer to chapter 4
2. Download New 8FX MCU hex file to BGMA, detailed operation please refer to chapter 3.1 and chapter 3.2
3. Using BGMA stand-alone function to program code to MCU, detailed operation please refer to chapter 5.

7 Install USB Driver

This chapter introduces USB driver installation

7.1 Installation Package

User can find driver folder in this route, and run **drv_install.bat** as Administrator, open installation interface as below.

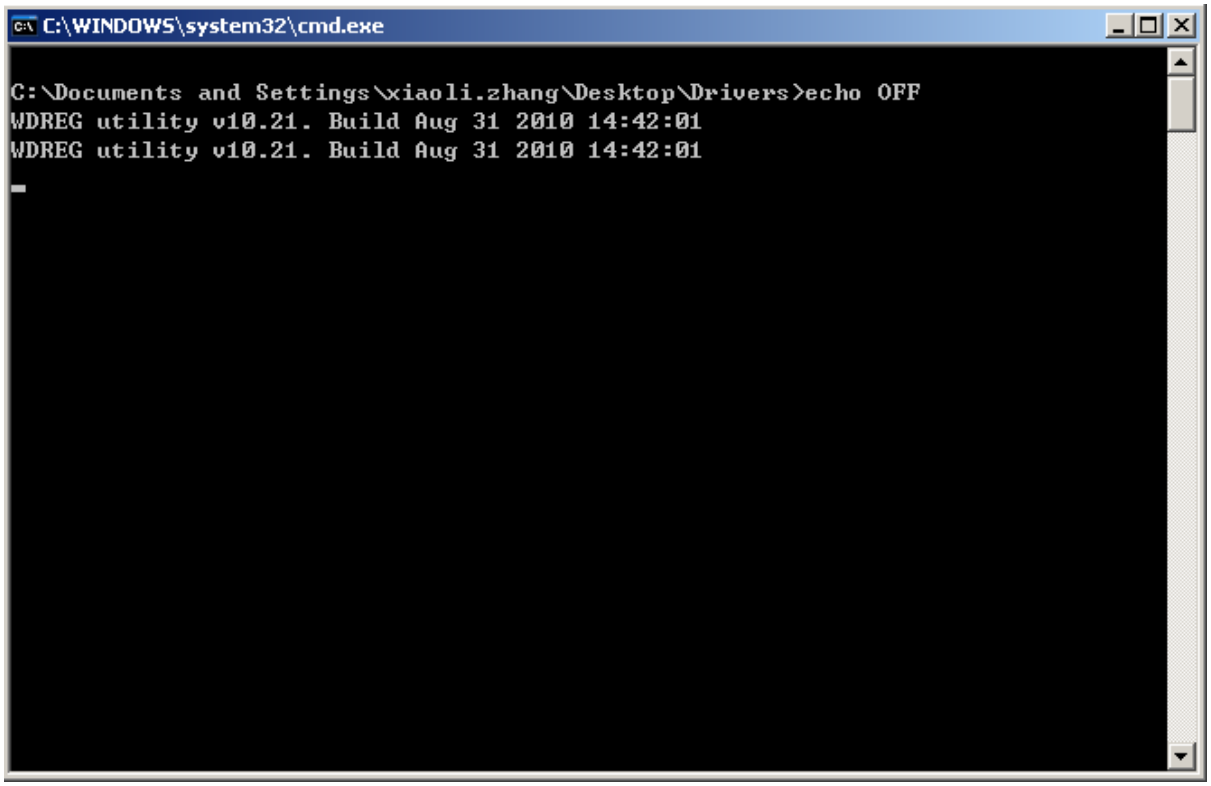
C:\WINDOWS\system32\cmd.exe
C:\Documents and Settings\xiaoli.zhang\Desktop\Drivers>echo OFF
WDREG utility v10.21. Build Aug 31 2010 14:42:01
WDREG utility v10.21. Build Aug 31 2010 14:42:01

Figure 7-1: Installation Interface

7.2 Check Driver

Connect MB2146-07 to PC, and power on it, and then check the device manager list as below:

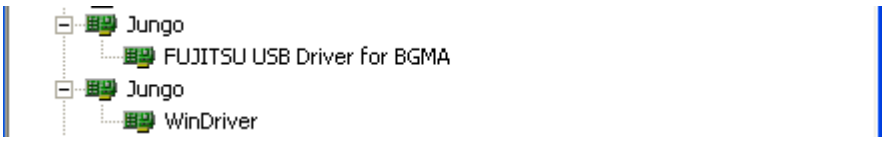

Figure 7-2: Device Manager List

7.3 Recommended Requirement

Model: IBM PC/AT Compatible.

Machine OS: 32-bit Windows 7, 32- bit Windows Vista, and 32- bit Windows XP.

Memory: It conforms to the recommended value of each OS.

Hard Disk: 300MB minimum (1GB or more recommended).

8 Additional Information

For more Information on FUJITSU semiconductor products, visit the following websites:

English version address:

http://www.fujitsu.com/cn/fsp/services/mcu/mb95/application_notes.html

Chinese version address:

http://www.fujitsu.com/cn/fss/services/mcu/mb95/application_notes.html

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